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AGRICULTURAL NOTES

PUBLISHED BY

PORTO RICO AGRICULTURAL EXPERIMENT STATION, MAYAGUEZ
OFFICE OF FARM MANAGEMENT, FEDERAL BUILDING, SAN JUAN

No. 58 Page 1.

San Juan, Puerto Rico, May, 1931.

A CHEMICAL TEST FOR THE IDENTIFICATION OF
LEMON-SCENTED BAY LEAVES.

By Henry C. Henriksen.

Those who grow bay trees (*Pimenta acris*) and sell the leaves to distilleries are well aware that the lemon-scented leaves are not alone valueless, but even objectionable, when mixed with those of the desirable variety. The identification of trees bearing lemon-scented leaves is not difficult provided the odor of lemon is so well developed as to be readily recognizable by the sense of smell. But with the lemon odor only slightly developed it is difficult to take proper precautions. Botanical differences such as shape and size of leaves and general appearance of the tree, may occasionally be useful indications but they are far from being reliable. The difficulty may be overcome readily by the use of a chemical test that is simple, reliable and applicable for use in the field.

APPARATUS AND REAGENT REQUIRED FOR THE TEST. - A porcelain mortar with pestle, a dozen test tubes with a capacity of about 35 cc., and a small measuring cylinder or a 5 cc. pipette. The reagent can be made by any druggist as follows: Dissolve 0.2 gram fuchsin in 100 cc. hot water. Let the solution cool and then add to it 2 grams sodium bisulphite followed by 2 cc. hydrochloric acid. Let the solution stand until the red color has disappeared, then add 100 cc. water and it is ready for use. Keep it in a well stoppered bottle and in a refrigerator if possible. If kept cool it will be serviceable for two weeks or more, but when kept at air temperature, and especially if the bottle is unstoppered frequently, a fresh solution should be made daily.

METHOD. - Take a small table with the apparatus and reagent into the field. Pick from a bay tree two fully matured leaves of average size, cut them with a sharp knife and pestle the cut material in a mortar with a few drops of water. When the material is partly disintegrated add 5 cc. of the fuchsin solution and continue pestling for about 1 minute. Wash the material into a test tube, rinse the mortar with water and mix the content. The solution usually becomes fully colored in a few minutes, but if the color is a muddy brown it must be left until it attains the full color which may take 10 minutes or more. The depth or the amount of color is not material; it is the tint that must be noted.

If the color of the solution is bright red without a tinge of violet the leaves are desirable, being free from lemon-scented oil and the tree can therefore be marked accordingly.

If the color of the solution is a deep violet the leaves are so heavily lemon-scented as to be entirely unfit for the making of bay oil and the tree should be marked accordingly, or preferably it should be cut down.

If the color is but slightly violet tinted the leaves are undesirable. But since small variations can be distinguished only by comparison the following method may be applied. Pestle together samples of pure leaves with varying amounts of lemon-scented leaves, say 1, 2, 5 and 10%, and treat as previously directed. Retain these samples in test tubes as well as a sample of pure leaves without admixture of lemon-scented leaves. They may be used as standards for comparison for some time since the colors do not fade readily. A person having a keen eye for color may distinguish a difference between a preparation from a pure leaf and that from an admixture containing 1% or less of a heavily lemon-scented leaf. By leaving the solution until the suspended matter has settled smaller differences may be detected.

JUL 23 1931

